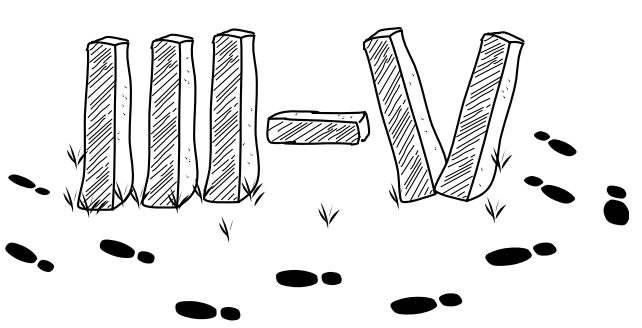

AROUND III-Vs

The application of compound technology can be found not only in the spectacular colour and textures of compound crystals created at 'The Art of Science' on the cover page, but in ceramic sculpture, because of its essential material flaw characteristics. Similarly, sonar techniques for defence are being adopted for business applications. It would all imply that compound semiconductor materials and their applications have true 'out of the box' uses.

SiC flaws to effect

Sculptor Mark Chatterly has been creating glazed ceramic figures for 20 years, constructing them without internal support at a rate of 6-8" inches a day. "I use 16,000lbs of clay a year. I build pieces up from the base and work on several at the same time." He has his own glaze formula and applies silicon carbide to increase the holes and fissures. A propane-heated kiln takes three weeks to fill and fires at 2,100ºC, 100º lower than porcelain.

Chatterly's 'Purple Seer' (a crater glazed ceramic displayed at Longstreth Goldberg Gallery in Naples, Florida) portrays an art critic: a mummy-style figure impressed all over with sculptured eyes.

RF & sensing cars

Ford Motor Co is to begin fitting Minnesota State Patrol squad cars and other state vehicles with sensing equipment that will record travel conditions and transmit the information to a central location for analysis. The year's experimental effort, with $600,000 funding, is intended to turn the vehicles into mobile traffic-monitoring tools, reporting locations and speeds, road temperatures, activated headlights and windshield wipers and antilock braking systems.
Transportation workers will monitor this to get ahead on problems like accidents and road damage. The Twin Cities project will largely determine whether the technology becomes widely used in the US.

Along with a "sensor suite" for taking various kinds of readings, vehicles will likely be equipped with cellular-style transmitters to relay data over long distances to a transportation-department facility. Alternatively, vehicles could dump the data using short-range wireless technologies, such as WiFi or dedicated short range communications at roadside transceivers. The traffic information could eventually be retransmitted to electronic road signs and other vehicles, but not in the project's initial phase.

Sonar Craft

Intriguing to see that sonar is the source behind measuring marketing effectiveness. Coined by none other than QinetiQ, its sonar techniques, originally designed for the military, have been used to develop a mathematical modelling technique Craft. Based on military diagnostic and signal detection, it delivers a quantitative marketing service, allowing users to predict the effect of marketing campaigns on future sales.

For a major FTSE 100 organisation, it was used to demonstrate and justify marketing investments over a two year period. Initial focus was on the effectiveness of TV advertising and to quantify any relationships that led to sales. The Craft team generated a seasonal baseline of new clients using the long-term sales data, generating a prediction of the second year's data that matched actual sales from the first year's data.

Results of the study included: 30% of the TV advertising budget had been ineffectually spent, two advertising campaigns had been completely ineffective, and a threshold value for 'Share of Voice' above which advertising did not generate new clients.

In addition, insight provided into the marketing system identified factors outside the initial TV advertising focus that influenced acquisitions. The effects of internal operating decisions on new client acquisitions were identified, as were effects of external occurrences outside clients' control on sales and error identification, showing incorrect information about the business.

Compound research robots?

Industrial robot components are costly. "Assembling a computer for research use with [robot] sensors, camera and motors can easily cost as much as a new small car," laments Dr Ansgar Bredenfeld from the Fraunhofer Institute for Autonomous Intelligent Systems, Saint Augustin, Bonn.

The Institute's answer is the VolksBot or people's robot, on show at Cebit last month. The modular robot platform is targeted at universities, research institutes and schools, generally plagued by tight budgets.

Volksbot is the result of the AIS researcher's years of experience with RoboCup, a worldwide robot soccer league that enables researchers to test and enhance the capabilities of their autonomous androids.